Providing A Cloud Based

"This book explores the difficulties and challenges of securing user data and information on cloud platforms. It also examines the current approaches to cloud-based technologies and assesses the possibilities for future advancements in this field. Highlighting a range of topics such as cloud forensics, information privacy, and standardization and security in the cloud"--
Despite the buzz surrounding the cloud computing, only a small percentage of organizations have actually deployed this new style of IT—so far. If you're planning your long-term cloud strategy, this practical book provides insider knowledge and actionable real-world lessons regarding planning, design, operations, security, and application transformation. This book teaches business and technology managers how to transition their organizati traditional IT to cloud computing. Rather than yet another book trying to sell or convince readers on the benefits of clouds, this book provides guidance, lessons learned, and best practices on how to design, deploy, operate, and secure an enterprise cloud based on real-world experience. Author James Bond provides useful guidance and best-practice checklists based on his field experience with real customers and cloud providers. You'll vi services from the perspective of a consumer and as an owner/operator of an enterprise private or hybrid cloud, and learn valuable lessons from successful and less-than-successful organization use-case scenarios. This is the information every CIO needs in order to make the business and technical decisions to finally execute on their journey to cloud computing. Get updated trends and definitions in cloud computing, deployment models, ar building or buying cloud services Discover challenges in cloud operations and management not foreseen by early adopters Use real-world lessons to plan and build an enterprise private or hybrid cloud Learn how to assess, port, and migrate legacy applications to the cloud Identify security threats and vulnerabilities unique to the cloud Employ a cloud management system for your enterprise (private or multi-provider hybrid) cloud ecosystem Understand the challenges for becoming an IT service broker leveraging the power of the cloud
Written by an expert with over 15 years' experience in thefield, this book establishes the foundations of Cloud computing,building an in-depth and diverse understanding of the technologiesbehind Cloud computing. In this book, the author begins with an introduction to Cloudcomputing, presenting fundamental concepts such as analyzing Clouddefinitions, Cloud evolution, Cloud services, Cloud deploymenttypes and highlighting the main challenges. Following on from theintroduction, the book is divided into three parts: Cloudmanagement, Cloud security, and practical examples. Part one presents the main components constituting the Cloud andfederated Cloud infrastructure (e.g., interactions and deployment), discusses management platforms(resources and services), identifies and analyzes the mainproperties of the Cloud infrastructure, and presents Cloudautomated management services: virtual and application resourcemanagement services. Part two analyzes the problem of establishingtrustworthy Cloud, discusses foundation frameworks for addressingthis problem – focusing on mechanisms for treating the securitychallenges, discusses foundation frameworks and mechanisms forremote attestation in Cloud and establishing Cloud trust anchors,and lastly provides a framework for establishing a trustworthyprovenance system and describes its importance in addressing majorsecurity challenges such as forensic investigation, mitigatinginsider threats and operation management assurance. Finally, partthree, based on practical examples, presents real-life commercialand open source examples of some of the concepts discussed, andincludes a real-life case study to reinforce learning –especially focusing on Cloud security. Key Featu Covers in detail two main aspects of Cloud computing:Cloud management and Cloud security • Presents a high-level view (i.e., architectureframework) for Clouds and federated Clouds which is useful forprofessionals, decision makers, and students • Includes illustrations and real-life deploymentscenarios to bridge the gap between theory and practice • Extracts, defines, and analyzes the desired propertiesand management services of Clou computing and its associatedchallenges and disadvantages • Analyzes the risks associated with Cloud services anddeployment types and what could be done to address the risk forestablishing trustworthy Cloud computing • Provides a research roadmap to establish next-generationtrustworthy Cloud computing • Includes exercises and solutions to problems as well asPowerPoint slides for instructors
See how the principles of Service Science govern the dynamics driving the adoption of cloud computing in the industry. Cloud as Service shows you how the evolution of enterprise computing platforms to application-specific cloud platforms (ASCPs) have aligned to business needs. You'll also learn processes for developing and building ASCPs. You'll gain insight into how executives, managers, and technologists are utilizing cloud services, service providers, equipment manufacturers, and software and application vendors participating in cloud supply chains. For business, the appeal of cloud computing must go beyond the notion of convenient, on-demand access of networked pooled access to computing resources. Industry leaders have learned to apply cloud computing to become more nimble, cost effective, and customer engaging as they strive for competitive advantage, of size. These companies define and build cloud platforms customized for their needs rather than using someone else's. This book shows you how to use a holistic, end-to-end view of platform planning, platform development, supply chains and operations to collapse platform development times to a fraction of the original time. You'll see that strategies for selling to the cloud market are essentially incomplete; and that in order to be successf businesses must become cloud service businesses themselves, incorporating cloud technologies in their engineering, IT, sales and marketing, and delivery processes. What You'll Learn: Historical perspective to provide insight into the dynamics driving cloud evolution today State of the art in IT requirements and cloud solutions The value of User Experience (UX) driven design principles The crucial roles of Service Brokers and Service Ass Managers The landscape of emerging cloud services and what they mean to your enterprise Service Portals and Enterprise Service Buses Who This Book Is For: CIOs, CTOs, data center architects, solution architects and application engineers Educational institutions building a systems integration curriculum Developers who want to understand how their work fits in the cloud ecosystem
Concepts and Practices
Using Cloud Computing to Achieve Business Agility
Cloud Management and Security
Cloud as a Service
Silver Clouds, Dark Linings
The Enterprise Cloud

This book provides readers with an overview of Cloud Computing, starting with historical background on mainframe computers and early networking protocols, leading to current concerns such as hardware and systems security, performance, emerging areas of IoT, Edge Computing etc. Readers will benefit from the in-depth discussion of cloud computing usage and the underlying architecture, with focus on best practices for using a dynamic cloud infrastructure, cloud operations management and cloud security. The authors explain carefully the "why's and how's" of Cloud Computing, so engineers will find this book and invaluable introduction to the topic.

Cloud Computing: Business Trends and Technologies provides a broad introduction to Cloud computing technologies and their applications to IT and telecommunications businesses (i.e., the network function virtualization, NFV). To this end, the book is expected to serve as a textbook in a graduate course on Cloud computing. The book examines the business cases and then concentrates on the technologies necessary for supporting them. In the process, the book addresses the principles of – as well as the known problems with – the underlying technologies, such as virtualization, data communications, network and operations management, security and identity management. It introduces, through open-source case studies (based on OpenStack), an extensive illustration of lifecycle management. The book also looks at the existing and emerging standards, demonstrating their respective relation to each topic. Overall, this is an authoritative textbook on this emerging and still-developing discipline, which •Guides the reader through basic concepts, to current practices, to state-of-the-art applications. •Considers technical standards bodies involved in Cloud computing standardization. •Is written by innovation experts in operating systems and data communications, each with over 20 years' experience in business, research, and teaching.

This book focuses on the development and implementation of cloud-based, complex software that allows parallelism, fast processing, and real-time connectivity. Software engineering (SE) is the design, development, testing, and implementation of software applications, and this discipline is as well developed as the practice is well established whereas the Cloud Software Engineering (CSE) is the design, development, testing, and continuous delivery of service-oriented software systems and applications (Software as a Service Paradigm). However, with the emergence of the highly attractive cloud computing (CC) paradigm, the tools and techniques for SE are changing. CC provides the latest software development environments and the necessary platforms relatively easily and inexpensively. It also allows the provision of software applications equally easily and on a pay-as-you-go basis. Business requirements for the use of software are also changing and there is a need for applications in big data analytics, parallel computing, AI, natural language processing, and biometrics, etc. These require huge amounts of computing power and sophisticated data management mechanisms, as well as device connectivity for Internet of Things (IoT) environments. In terms of hardware, software, communication, and storage, CC is highly attractive for developing complex software that is rapidly becoming essential for all sectors of life, including commerce, health, education, and transportation. The book fills a gap in the SE literature by providing scientific contributions from researchers and practitioners, focusing on frameworks, methodologies, applications, benefits and inherent challenges/barriers to engineering software using the CC paradigm.

In the era of the Internet of Things and Big Data, Cloud Computing has recently emerged as one of the latest buzzwords in the computing industry. It is the latest evolution of computing, where IT recourses are offered as services. Cloud computing provides on-demand, scalable, device-independent, and reliable services to its users. The exponential growth of digital data bundled with the needs of analysis, processing and storage, and cloud computing has paved the way for a cheap, secure, and omnipresent computing framework allowing for the delivery of enormous computing and storage capacity to a diverse community of end-recipients. Clouds are distributed technology platforms that leverage sophisticated technology innovations to provide highly scalable and resilient environments that can be remotely utilized by organizations in a multitude of powerful ways. The term cloud is often used as a metaphor for the Internet and can be defined as a new type of utility computing that basically uses servers that have been made available to third parties via the Internet.

Basic to Advance research on the concepts and design of Cloud Computing
Assured Cloud Computing
Cloud Computing Fundamentals
Developing Apps in the New World of Cloud Computing
SOA Source Book
Learn the Latest Cloud Technology and Architecture with Real-World Examples and Applications

Cloud computing continues to emerge as a subject of substantial industrial and academic interest. Although the meaning and scope of "cloud computing" continues to be debated, the current notion of clouds blurs the distinctions between grid services, web services, and data centers, among other areas. Clouds also bring considerations of lowering the cost for relatively bursty applications to the fore. Cloud Computing: Principles, Systems and Applications is an essential reference/guide that provides thorough and timely examination of the services, interfaces and types of applications that can be executed on cloud-based systems. The book identifies and highlights state-of-the-art techniques and methods for designing cloud systems, presents mechanisms and schemes for linking clouds to economic activities, and offers balanced coverage of all related technologies that collectively contribute towards the realization of cloud computing. With an emphasis on the conceptual and systemic links between cloud computing and other distributed computing approaches, this text also addresses the practical importance of efficiency, scalability, robustness and security as the four cornerstones of quality of service. Topics and features: explores the relationship of cloud computing to other distributed computing paradigms, namely peer-to-peer, grids, high performance computing and web services; presents the principles, techniques, protocols and algorithms that can be adapted from other distributed computing paradigms to the development of successful clouds; includes a Foreword by Professor Mark Baker of the University of Reading, UK; examines current cloud-practical applications and highlights early deployment experiences; elaborates the economic schemes needed for clouds to become viable business models. This book will serve as a comprehensive reference for researchers and students engaged in cloud computing. Professional system architects, technical managers, and IT consultants will also find this unique text a practical guide to the application and delivery of commercial cloud services. Prof. Nick Antonopoulos is Head of the School of Computing, University of Derby, UK. Dr. Lee Gillam is a Lecturer in the Department of Computing at the University of Surrey, UK.

This latest textbook from bestselling author, Douglas E. Comer, is a class-tested book providing a comprehensive introduction to cloud computing. Focusing on concepts and principles, rather than commercial offerings by cloud providers and vendors, The Cloud Computing Book: The Future of Computing Explained gives readers a complete picture of the advantages and growth of cloud computing, cloud infrastructure, virtualization, automation and orchestration, and cloud-native software design. The book explains real and virtual data center facilities, including computation (e.g., servers, hypervisors, Virtual Machines, and containers), networks (e.g., leaf-spine architecture, VLANs, and VxLAN), and storage mechanisms (e.g., SAN, NAS, and object storage). Chapters on automation and orchestration cover the conceptual organization of systems that automate software deployment and scaling. Chapters on cloud-native software cover parallelism, microservices, MapReduce, controller-based designs, and serverless computing. Although it focuses on concepts and principles, the book uses popular technologies in examples, including Docker containers and Kubernetes. Final chapters explain security in a cloud environment and the use of models to help control the complexity involved in designing software for the cloud. The text is suitable for a one-semester course for software engineers who want to understand cloud, and for IT managers moving an organization's computing to the cloud.

Master's Thesis from the year 2014 in the subject Computer Science - IT-Security, Lovely Professional University, Punjab, course: M.Tech (Computer Science and Engineering), language: English, abstract: Currently cloud computing environments have come up with a serious problem known as security which is in terms of Confidentiality of Data, Integrity of the Message and Authenticity of the users (CIA). Since user's personal data is being stored in an unencrypted format on a remote machine operated by third party vendors who provide various services, the impact of user's identity and unauthorized access or disclosure of files are very high. Though we have various techniques and algorithms to protect our data from hackers and intruders still cloud environments are prone to other attacks. In this paper, a novel approach is implemented to protect user's confidential data from third party service providers, and also to make sure that the data is not disclosed to any unauthentic user or the service provider even, in any cloud environments. This approach provides a multi-level security in three aspects: 1) User authentication for "authorization" to enter the network, 2) Image Sequencing password for "authentication" wherein it is proved that the identity is original user, and 3) RSA algorithm to encrypt the data further for providing "data integrity". Thus this approach provides an overall security to the client's personal data and the major issue of confidentiality, integrity and authenticity is fully solved. Implemented results are represented to illustrate that our approach has a reasonable performance.

Chapter 1: Introduction -- Chapter 2: Infrastructure as a Service -- Chapter 3: Platform as a Service -- Chapter 4: Application as a Service -- Chapter 5: Paradigms for Developing Cloud Applications -- Chapter 6: Addressing the Cloud Challenges -- Chapter 7: Security -- Chapter 8: Managing the Cloud Infrastructure -- Chapter 9: Related Technologies -- Chapter 10: Future trends and Research Directions.

Cloud Computing For Dummies
Cloud Computing for Enterprise Architectures
The Future of Computing Explained
Credibility-based Trust Management and Discovery of Cloud Services
Cloud Security
Hybrid Cloud For Dummies

True to form, Melvin Greer's futurist thinking provides new applicability to Software as a Service that identifies ways of reducing costs, creating greater efficiencies, and ultimately providing significant long-term value through business transformation. He continues to be on the cutting edge of merging business function evolution and technology innovation to increase customer satisfaction and return on investments. Kevin Manuel-Scott, chairman and CEO, RONIN IT Services, LLC Melvin Greer provides an excellent guide to the Cloud computing IT model with a solid overview of concepts, business aspects, technical implications, benefits, challenges, and trends. Definitely a must read' for IT managers and enterprise architects considering adoption of this flexible, beneficial business model within their organization. John Magnuson, senior staff engineer, Lockheed Martin This book offers the most comprehensive view of Cloud computing and SaaS on the market today. The author skillfully lays out a game plan for government and commercial entities alike looking to stay relevant in this burgeoning business paradigm. Ken Brown, program account executive, IBM Federal Almost every business reaches a time when the fundamentals change. This time is referred to as a strategic inflection point. Adopting new technology or fighting the competition may not be enough when these critical moments arise. That's because inflection points build up force so quickly that organizations may have a hard time even putting a finger on what has changed. The way a firm responds could propel it to new heights or lead to its demise. Over the last few years, industry has begun developing a model of information technology known as Cloud computing, which includes Software as a Service. This new model has reached an inflection point and will give users the choice to purchase IT as a service, as a complement to, or as a replacement of the traditional IT software/hardware infrastructure purchase. It's time for businesses to transform how they approach advanced software and innovative business models so they can achieve real agility. If you are a decision maker involved with the deployment of information technology, then it's imperative that you understand Software as a Service Inflection Point.

Cloud service benchmarking can provide important, sometimes surprising insights into the quality of services and leads to a more quality-driven design and engineering of complex software architectures that use such services. Starting with a broad introduction to the field, this book guides readers step-by-step through the process of designing, implementing and executing a cloud service benchmark, as well as understanding and dealing with its results. It covers all aspects of cloud service benchmarking, i.e., both benchmarking the cloud and benchmarking in the cloud, at a basic level. The book is divided into five parts: Part I discusses what cloud benchmarking is, provides an overview of cloud services and their key properties, and describes the notion of a cloud system and cloud-service quality. It also addresses the benchmarking lifecycle and the motivations behind running benchmarks in particular phases of an application lifecycle. Part II then focuses on benchmark design by discussing key objectives (e.g., repeatability, fairness, or understandability) and defining metrics and measurement methods, and by giving advice on developing own measurement methods and metrics. Next, Part III explores benchmark execution and implementation challenges and objectives as well as aspects like runtime monitoring and result collection. Subsequently, Part IV addresses benchmark results, covering topics such as an abstract process for turning data into insights, data preprocessing, and basic data analysis methods. Lastly, Part V concludes the book with a summary, suggestions for further reading and pointers to benchmarking tools available on the Web. The book is intended for researchers and graduate students of computer science and related subjects looking for an introduction to benchmarking cloud services, but also for industry practitioners who are interested in evaluating the quality of cloud services or who want to assess key qualities of their own implementations through cloud-based experiments.

*Designing Networks and Services for the Cloud Delivering business-grade cloud applications and services A rapid, easy-to-understand approach to delivering a secure, resilient, easy-to-manage, SLA-driven cloud experience Designing Networks and Services for the Cloud helps you understand the design and architecture of networks and network services that enable the delivery of business-grade cloud services. Drawing on more than 40 years of experience in network and cloud design, validation, and deployment, the authors demonstrate how networks spanning from the Enterprise branch/HQ and the service provider Next-Generation Networks (NGN) to the data center fabric play a key role in addressing the primary inhibitors to cloud adoption–security, performance, and management complexity. The authors first review how virtualized infrastructure lays the foundation for the delivery of cloud services before delving into a primer on clouds, including the management of cloud services. Next, they explore key factors that inhibit enterprises from moving their core workloads to the cloud, and how advanced networks and network services can help businesses migrate to the cloud with confidence. You'll find an in-depth look at data center networks, including virtualization-aware networks, virtual network services, and service overlays. The elements of security in this virtual, fluid environment are discussed, along with techniques for optimizing and accelerating the service delivery. The book dives deeply into cloud-aware service provider NGNs and their role in flexibly connecting distributed cloud resources, ensuring the security of provider and tenant resources, and enabling the optimal placement of cloud services. The role of Enterprise networks as a critical control point for securely and cost-effectively connecting to high-performance cloud services is explored in detail before various parts of the network finally come together in the definition and delivery of end-to-end cloud SLAs. At the end of the journey, you preview the exciting future of clouds and network services, along with the major upcoming trends. If you are a technical professional or manager who must design, implement, or operate cloud or NGN solutions in enterprise or service-provider environments, this guide will be an indispensable resource. * Understand how virtualized data-center infrastructure lays the groundwork for cloud-based services * Move from distributed virtualization to "IT-as-a-service" via automated self-service portals * Classify cloud services and deployment models, and understand the actors in the cloud ecosystem * Review the elements, requirements, challenges, and opportunities associated with network services in the cloud * Optimize data centers via network segmentation, virtualization-aware networks, virtual network services, and service overlays * Systematically secure cloud services * Optimize service and application performance * Plan and implement NGN infrastructure to support and accelerate cloud services * Successfully connect enterprises to the cloud * Define and deliver on end-to-end cloud SLAs * Preview the future of cloud and network services*

This book addresses the emerging area of cloud computing, providing a comprehensive overview of the research areas, recent work and open research problems. The move to cloud computing is no longer merely a topic of discussion; it has become a core competency that every modern business needs to embrace and excel at. It has changed the way enterprise and internet computing is viewed, and this success story is the result of the long-term efforts of computing research community around the globe. It is predicted that by 2026 more than two-thirds of all enterprises across the globe will be entirely run in cloud. These predictions have led to huge levels of funding for research and development in cloud computing and related technologies. Accordingly, universities across the globe have incorporated cloud computing and its related technologies in their curriculum, and information technology (IT) organizations are accelerating their skill-set evolution in order to be better prepared to manage emerging technologies and public expectations of the cloud, such as new services.

Strategies for Design and Implementation
A Security and Privacy Guide
The Cloud Computing Book
Software Engineering in the Era of Cloud Computing
Handbook of Cloud Computing
Concepts, Technology & Architecture

Cloud Services, Networking and Management provides a comprehensive overview of the cloud infrastructure and services, as well as their underlying management mechanisms, including data center virtualization and networking, cloud security and reliability, big data analytics, scientific and commercial applications. Special features of the book include: State-of-the-art content Self-contained chapters for readers with specific interests Includes commercial applications on Cloud (video services and games)

Academic Paper from the year 2019 in the subject Computer Science - General, grade: 8.67, , course: Master Of Computer Application, language: English, abstract: This paper analyses how Big Data can be stored by Cloud Computing and Fog Computing. Because of the broad utilization of web-based social networking, data is produces by the fast increment. Big Data is giving the office to accumulate, store, oversee and examine information in colossal volume that is produced through the healthcare system. Cloud Computing is an advancement too that insures the fulfillment of IT requirements in a suitable way by providing the cloud-based environment for medical field. Storage is an immense issue for BD, volume of data is huge, this issue may resolve with the help of cloud computing by providing the storage space for data and processing mechanism as well. This paper presents these thoughts with respects to medicinal services. It tells regarding the points of interest, yet in addition challenges conveyed by Big Data to this field. It additionally talks about the idea of fog computing, some advantages of edge computing on cloud computing and deliberate the architecture of fog computing for healthcare and services provides by that architecture.

The Encyclopedia of Cloud Computing comprehensively cover all aspects of cloud computing. It provides IT professionals, educators, researchers and students a compendium of cloud computing knowledge – concepts, principles, architecture, technology, security, privacy and regulatory compliance, applications, adoption, business, and social and legal aspects. Containing contributions from a spectrum of subject matter experts in industry and academia, this unique publication also addresses questions related to technological trends and developments, research opportunities, best practices, standards, and cloud adoption that stakeholders might have in the context of development, operation, management, and use of clouds, providing multiple perspectives. Furthermore, itexamines cloud computing's impact now and in the future. The encyclopedia is logically organised into 10 sections amd each section into a maximum of 12 chapters, each covering a major topic/area with cross-references as required. The chapters consist of tables, illustrations, side-bars as appropriate. In additon, it also includes highlights at the beginning of each chapter, as well as backend material references and additional resources for further information (including relevant websites, videos and software tools). The encyclopedia also contains illustrations and case studies. A list of acronyms are provided in the beginning and a comprehensive and informative glossary at the end.

The Executive's Strategic Guide to Driving Maximum Business Value from Cloud Services Cloud services represent a fundamental shift in how individuals, enterprises, and governments conduct business, interact, and use technology. If used effectively, they can increase business agility and focus, simplify capacity planning, and strengthen cost control. Unsurprisingly, however, the cloud also presents risks. In this concise, executive level book, leading experts Archie Reed and Stephen G. Bennett share the insights and guidance decision-makers need to drive maximum value from cloud services--and avoid the pitfalls. The authors explain what cloud computing is, how it works, who provides cloud services, and how companies are using them. Next, they walk through the entire cloud lifecycle, offering expert guidance on planning, governance, compliance, security, operations, administration, management, and more. You'll learn how to: · Assess the opportunities, benefits, and risks of cloud services in your environment · Use the cloud to improve processes, accelerate system/product delivery, or create entirely new products and businesses · Approach the cloud strategically (and learn why you should) · Understand cloud infrastructure, operations, and standards from the decision-maker's point of view · Build on existing solution architecture, design practices, and SOA investments · Ensure appropriate control, monitoring, compliance, and security · Use IT process standardization to simplify cloud services management · Define a flexible roadmap that enables multiple projects to move forward in parallel, and can change as the marketplace evolves Cover illustration by RapidEye /iStockphoto.com

Fundamentals to Design, Build, and Manage Cloud Applications
A Concise Guide to Cloud Computing
Best Practices for Transforming Legacy IT
Software as a Service Inflection Point
Storage of Big Data. From Cloud Computing to Fog Computing (C2F)
Building Applications and Infrastructure in the Cloud

Did you know that cloud computing is being used by just about every person or company on the internet today in some shape or form? Most people use the cloud and never even think about it. I've been writing, teaching and speaking about cloud computing since the time it was simply called "the cloud". In this book, you're going to learn how the cloud works, how it can help you, your team or organization, and the different types of cloud computing. In chapters 4 and 5, you're going to get a hands-on experience from my examples and learn real-world applications of cloud computing. In chapter 5 I'll show you: How to create and use a Microsoft Azure subscription to get $200 credit and 12 months of 25 free services. How to create a Windows virtual machine (VM). How to create a Linux virtual machine. When you read my book, you will understand different phrases and acronyms, such as: Software as a service Infrastructure as a service Platform as a service Virtualization Multitenancy and so much more! We'll also talk about: Public clouds Private clouds Hybrid clouds Multi-clouds Finally, we will look at the risks of cloud computing, cover the current marketplace and see a lot of the different companies offering cloud services. You will discover how to recognize and understand what it is these companies actually provide.

If you're involved in planning IT infrastructure as a network or system architect, system administrator, or developer, this book will help you adapt your skills to work with these highly scalable, highly redundant infrastructure services. While analysts hotly debate the advantages and risks of cloud computing, IT staff and programmers are left to determine whether and how to put their applications into these virtualized services. Cloud Application Architectures provides answers -- and critical guidance -- on issues of cost, availability, performance, scaling, privacy, and security. With Cloud Application Architectures, you will: Understand the differences between traditional deployment and cloud computing Determine whether moving existing applications to the cloud makes technical and business sense Analyze and compare the long-term costs of cloud services, traditional hosting, and owning dedicated servers Learn how to build a transactional web application for the cloud or migrate one to it Understand how the cloud helps you better prepare for disaster recovery Change your perspective on application scaling To provide realistic examples of the book's principles in action, the author delves into some of the choices and operations available on Amazon Web Services, and includes high-level summaries of several of the other services available on the market today. Cloud Application Architectures provides best practices that apply to every available cloud service. Learn how to make the transition to the cloud and prepare your web applications to succeed.

Cloud computing is gaining a considerable momentum as a new computing paradigm for providing flexible and on-demand infrastructures, platforms and software as services. The trust management of services issues attracted many researchers in the past years. However, in cloud computing, with the highly dynamic, distributed and non-transparent nature of cloud services, this research area has gained a considerable significance. Robust trust management approaches will be essential in establishing trust between cloud service consumers and providers and will significantly contribute to the adoption and growth of cloud computing. In this dissertation, we present a novel approach for credibility-based trust management and automatic discovery of cloud services in distributed and highly dynamic environments. We first propose a Zero-Knowledge Credibility Proof Protocol to prove the credibility of consumers' feedback without breaching consumers' privacy. We then propose an adaptive and robust Credibility Model for assessing the consumers' credibility in giving feedback to cloud services. To measure how experienced a consumer would be, we use the concepts of Consumer Capability and Majority Consensus. We further introduce the concepts of Feedback Density and Occasional Feedback Collusion to detect strategic and occasional behaviors of collusion attacks. To detect Sybil attacks, we introduce the concepts of Multi-Identity Recognition and Occasional Sybil Attacks. To adjust trust results for cloud services that have been affected by malicious behaviors, we introduce the concept of Change Rate of Trust. We then propose a scalable Availability Model to manage the availability of the decentralized implementation of the trust management service. To share the workload between the trust management service nodes, we use the concept of load balancing thereby always maintaining a desired availability level. We introduce the concept of operational power to determine the optimal number of nodes and exploit particle filtering to precisely predict the availability of each node and determine the optimal number of replicas for each node. The techniques presented in this dissertation are implemented in Cloud Armor, a prototype that provides a set of functionalities to deliver Trust as a Service (TaaS). Finally, we conduct extensive experimental and performance studies of the proposed techniques using a collection of real-world trust feedbacks on cloud services. We particularly develop a Cloud Service Crawler Engine for cloud services collection. The collected datasets include meta-data of nearly 6,000 real-world cloud services (1.06GB). The experimental results shows that our system i) is able to effectively distinguish between feedbacks from experienced and amateur consumers; ii) is more adaptive and robust in trust calculations by effectively detecting collusion and Sybil attacks without breaching consumers' privacy no matter attacks occur in a strategic or occasional behavior; iii) is more scalable and maintains a desired availability level in highly dynamic environments and iv) provides an efficient support for identifying, collecting, validating, categorizing and recommending cloud services based on trust.

Clouds are distributed technology platforms that leverage sophisticated technology innovations to provide highly scalable and resilient environments that can be remotely utilized by organizations in a multitude of powerful ways. To successfully build upon, integrate with, or even create a cloud environment requires an understanding of its common inner mechanics, architectural layers, and models, as well as an understanding of the business and economic factors that result from the adoption and real-world use of cloud-based services. In Cloud Computing: Concepts, Technology & Architecture, Thomas Erl, one of the world's top-selling IT authors, teams up with cloud computing experts and researchers to break down proven and mature cloud computing technologies and practices into a series of well-defined concepts, models, technology mechanisms, and technology architectures, all from an industry-centric and vendor-neutral point of view. In doing so, the book establishes concrete, academic coverage with a focus on structure, clarity, and well-defined building blocks for mainstream cloud computing platforms and solutions. Subsequent to technology-centric coverage, the book proceeds to establish business-centric models and metrics that allow for the financial assessment of cloud-based IT resources and their comparison to those hosted on traditional IT enterprise premises. Also provided are templates and formulas for calculating SLA-related quality-of-service values and numerous explorations of the SaaS, PaaS, and IaaS delivery models. With more than 260 figures, 29 architectural models, and 20 mechanisms, this indispensable guide provides a comprehensive education of cloud computing essentials that will never leave your side.

Auditing Cloud Computing
Issues and Current Trends
Business Trends and Technologies
Understanding the Service Innovation Ecosystem
Cloud Computing for Teaching and Learning: Strategies for Design and Implementation
Concepts, Methodologies, Tools, and Applications

This important text provides a single point of reference for state-of-the-art cloud computing design and implementation techniques. The book examines cloud computing from the perspective of enterprise architecture, asking the question; how do we realize new business potential with our existing enterprises? Topics and features: with a Foreword by Thomas Erl; contains contributions from an international selection of preeminent experts; presents the state-of-the-art in enterprise architecture approaches with respect to cloud computing models, frameworks, technologies, and applications; discusses potential research directions, and technologies to facilitate the realization of emerging business models through enterprise architecture approaches; provides relevant theoretical frameworks, and the latest empirical research findings.
The auditor's guide to ensuring correct security and privacy practices in a cloud computing environment Many organizations are reporting or projecting a significant cost savings through the use of cloud computing—utilizing shared computing resources to provide ubiquitous access for organizations and end users. Just as many organizations, however, are expressing concern with security and privacy issues for their organization's data in the "cloud." Auditing Cloud Computing provides necessary guidance to build a proper audit to ensure operational integrity and customer data protection, among other aspects, are addressed for cloud based resources. Provides necessary guidance to ensure auditors address security and privacy aspects that through a proper audit can provide a specified level of assurance for an organization's resources Reveals effective methods for evaluating the security and privacy practices of cloud services A cloud computing reference for auditors and IT security professionals, as well as those preparing for certification credentials, such as Certified Information Systems Auditor (CISA) Timely and practical, Auditing Cloud Computing expertly provides information to assist in preparing for an audit addressing cloud computing security and privacy for both businesses and cloud based service providers.
This book documents the scientific results of the projects related to the Trusted Cloud Program, covering fundamental aspects of trust, security, and quality of service for cloud-based services and applications. These results aim to allow trustworthy IT applications in the cloud by providing a reliable and secure technical and legal framework. In this domain, business models, legislative circumstances, technical possibilities, and realizable security are closely interwoven and thus are addressed jointly. The book is organized in four parts on "Security and Privacy", "Software Engineering and Software Quality", "Platforms, Middleware and Integration", and "Social Aspects, Business Models and Standards". It thus provides a holistic view on technological, societal, and legal aspects, which are indispensable not only to ensure the security of cloud services and the data they process, but also to gain the trust of society, business, industry, and science in these services. The ultimate goal of the book, as well as of the Trusted Cloud Program in general, is to distribute these results to a broader audience in both academia and industry, and thus to help with the proliferation of "Industry 4.0" services.
The easy way to understand and implement cloud computing technology written by a team of experts Cloud computing can be difficult to understand at first, but the cost-saving possibilities are great and many companies are getting on board. If you've been put in charge of implementing cloud computing, this straightforward, plain-English guide clears up the confusion and helps you get your plan in place. You'll learn how cloud computing enables you to run a more green IT infrastructure, and access technology-enabled services from the Internet ("in the cloud") without having to understand, manage, or invest in the technology infrastructure that supports them. You'll also find out what you need to consider when implementing a plan, how to handle security issues, and more. Cloud computing is a way for businesses to take advantage of storage and virtual services through the Internet, saving money on infrastructure and support This book provides a clear definition of cloud computing from the utility computing standpoint and also addresses security concerns Offers practical guidance on delivering and managing cloud computing services effectively and efficiently Presents a proactive and pragmatic approach to implementing cloud computing in any organization Helps IT managers and staff understand the benefits and challenges of cloud computing, how to select a service, and what's involved in getting it up and running Highly experienced author team consults and gives presentations on emerging technologies Cloud Computing For Dummies gets straight to the point, providing the practical information you need to know.
Moving to the Cloud
Resource Management Framework for Volunteer Cloud Computing
Cloud Computing
Principles, Systems and Applications
Cloud Computing Patterns
Encyclopedia of Cloud Computing

This book offers readers a quick, comprehensive and up-to-date overview of the most important methodologies, technologies, APIs and standards related to the portability and interoperability of cloud applications and services, illustrated by a number of use cases representing a variety of interoperability and portability scenarios. The lack of portability and interoperability between cloud platforms at different service levels is the main issue affecting cloud-based services today. The brokering, negotiation, management, monitoring and reconfiguration of cloud resources are challenging tasks for developers and users of cloud applications due to the different business models associated with resource consumption, and to the variety of services and features offered by different cloud providers. In chapter 1 the concepts of cloud portability and interoperability are introduced, together with the issues and limitations arising when such features are lacking or ignored. Subsequently, chapter 2 provides an overview of the state-of-the-art methodologies and technologies that are currently used or being explored to enable cloud portability and interoperability. Chapter 3 illustrates the main cross-platform cloud APIs and how they can solve interoperability and portability issues. In turn, chapter 4 presents a set of ready-to-use solutions which, either because of their broad-scale use in cloud computing scenarios or because they utilize established or emerging standards, play a fundamental part in providing interoperable and portable solutions. Lastly, chapter 5 presents an overview of emerging standards for cloud Interoperability and portability. Researchers and developers of cloud-based services will find here a brief survey of the relevant methodologies, APIs and standards, illustrated by case studies and complemented by an extensive reference list for more detailed descriptions of every topic covered.

The current work provides CIOs, software architects, project managers, developers, and cloud strategy initiatives with a set of architectural patterns that offer nuggets of advice on how to achieve common cloud computing-related goals. The cloud computing patterns capture knowledge and experience in an abstract format that is independent of concrete vendor products. Readers are provided with a toolbox to structure cloud computing strategies and design cloud application architectures. By using this book cloud-native applications can be implemented and best suited cloud vendors and tooling for individual usage scenarios can be selected. The cloud computing patterns offer a unique blend of academic knowledge and practical experience due to the mix of authors. Academic knowledge is brought in by Christoph Fehling and Professor Dr. Frank Leymann who work on cloud research at the University of Stuttgart. Practical experience in building cloud applications, selecting cloud vendors, and designing enterprise architecture as a cloud customer is brought in by Dr. Ralph Retter who works as an IT architect at T-Systems, Walter Schupeck, who works as a Technology Manager in the field of Enterprise Architecture at Daimler AG,and Peter Arbitter, the former head of T Systems' cloud architecture and IT portfolio team and now working for Microsoft. Voices on Cloud Computing Patterns Cloud computing is especially beneficial for large companies such as Daimler AG. Prerequisite is a thorough analysis of its impact on the existing applications and the IT architectures. During our collaborative research with the University of Stuttgart, we identified a vendor-neutral and structured approach to describe properties of cloud offerings and requirements on cloud environments. The resulting Cloud Computing Patterns have profoundly impacted our corporate IT strategy regarding the adoption of cloud computing. They help our architects, project managers and developers in the refinement of architectural guidelines and communicate requirements to our integration partners and software suppliers. Dr. Michael Gorriz – CIO Daimler AG Ever since 2005 T-Systems has provided a flexible and reliable cloud platform with its "Dynamic Services". Today these cloud services cover a huge variety of corporate applications, especially enterprise resource planning, business intelligence, video, voice communication, collaboration, messaging and mobility services. The book was written by senior cloud pioneers sharing their technology foresight combining essential information and practical experiences. This valuable compilation helps both practitioners and clients to really understand which new types of services are readily available, how they really work and importantly how to benefit from the cloud. Dr. Marcus Hacke – Senior Vice President, T-Systems International GmbH This book provides a conceptual framework and very timely guidance for people and organizations building applications for the cloud. Patterns are a proven approach to building robust and sustainable applications and systems. The authors adapt and extend it to cloud computing, drawing on their own experience and deep contributions to the field. Each pattern includes an extensive discussion of the state of the art, with implementation considerations and practical examples that the reader can apply to their own projects. By capturing our collective knowledge about building good cloud applications and by providing a format to integrate new insights, this book provides an important tool not just for individual practitioners and teams, but for the cloud computing community at large. Kristof Kloeckner – General Manager,Rational Software, IBMSoftware Group
With its cost efficiency, enabling of collaboration and sharing of resources, and its ability to improve access, cloud computing is likely to play a big role in the classrooms of tomorrow. Cloud Computing for Teaching and Learning: Strategies for Design and Implementation provides the latest information about cloud development and cloud applications in teaching and learning. The book alsos include empirical research findings in these areas for professionals and researchers working in the field of e-learning who want to implement teaching and learning with cloud computing, as well as provide insights and support to executives concerned with cloud development and cloud applications in e-learning communities and environments.
The need for high computing resources is on the rise, despite the exponential increase of the computing capacity of workstations, the proliferation of mobile devices, and the omnipresence of data centers with massive server farms that housed tens (if not hundreds) of thousands of powerful servers. This is mainly due to the unprecedented increase in the number of Internet users worldwide and the Internet of Things (IoTs). So far, Cloud Computing has been providing the necessary computing infrastructures for applications, including IoT applications. However, the current cloud infrastructures that are based on dedicated datacenters are expensive to set-up; running the infrastructure needs expertise, a lot of electrical power for cooling the facilities, and redundant supply of everything in a data center to provide the desired resilience. Moreover, the current centralized cloud infrastructures will not suffice for IoT's network intensive applications with very fast response requirements. Alternative cloud computing models that depend on spare resources of volunteer computers are emerging, including volunteer cloud computing, in addition to the conventional data center based clouds. These alternative cloud models have one characteristic in common--they do not rely on dedicated data centers to provide the cloud services. Volunteer clouds are opportunistic cloud systems that run over donated spare resources of volunteer computers. On the one hand, volunteer clouds claim numerous outstanding advantages: affordability, on-premise, self-provision, greener computing (owing to consolidate use of existent computers), etc. On the other hand, full-fledged implementation of volunteer cloud computing raises unique technical and research challenges: management of highly dynamic and heterogeneous compute resources, Quality of Service (QoS) assurance, meeting Service Level Agreement (SLA), reliability, security/trust, which are all made more difficult due to the high dynamics and heterogeneity of the non-dedicated cloud hosts. This dissertation investigates the resource management aspect of volunteer cloud computing. Due to the intermittent availability and heterogeneity of computing resource involved, resource management is one of the challenging tasks in volunteer cloud computing. The dissertation, specifically, focuses on the Resource Discovery and VM Placement tasks of resource management. The resource base over which volunteer cloud computing depends on is a scavenged, sporadically available, aggregate computing power of individual volunteer computers. Delivering reliable cloud services over these unreliable nodes is a big challenge in volunteer cloud computing. The fault tolerance of the whole system rests on the reliability and availability of the infrastructure base. This dissertation discusses the modelling of a fault tolerant prediction based resource discovery in volunteer cloud computing. It presents a multi-state semi-Markov process based model to predict the future availability and reliability of nodes in volunteer cloud systems. A volunteer node is modelled as a semi-Markov process, whose future state depends only on its current state. This exactly matches with a key observation made in analyzing the traces of personal computers in enterprises that the daily patterns of resource availability are comparable to those in the most recent days.

The dissertation illustrates how prediction based resource discovery enables volunteer cloud systems to provide reliable cloud services over the unreliable and non-dedicated volunteer hosts with empirical evidences. VM placement algorithms play crucial role in Cloud Computing in fulfilling its characteristics and achieving its objectives. In general, VM placement is a challenging problem that has been extensively studied in conventional Cloud Computing context. Due to its divergent characteristics, volunteer cloud computing needs a novel and unique way of solving the existing Cloud Computing problems, including VM placement. Intermittent availability of nodes, unreliable infrastructure, and resource constrained nodes are some of the characteristics of volunteer cloud computing that make VM placement problem more complicated. In this dissertation, we model the VM placement problem as a Bounded 0-1 Multi-Dimensional Knapsack Problem. As a known NP-hard problem, the dissertation discusses heuristic based algorithms that takes the typical characteristics of volunteer cloud computing into consideration, to solve the VM placement problem formulated as a knapsack problem. Three algorithms are developed to meet the objectives and constraints specific to volunteer cloud computing. The algorithms are tested on a real volunteer cloud computing test-bed and showed a good performance results based on their optimization objectives. The dissertation also presents the design and implementation of a real volunteer cloud computing system, cuCloud, that bases its resource infrastructure on donated computing resource of computers. The need for the development of cuCloud stems from the lack of experimentation platform, real or simulation, that specifically works for volunteer cloud computing. The cuCloud is a system that can be called a genuine volunteer cloud computing system, which manifests the concept of "Volunteer Computing as a Service" (VCaaS), with a particular significance in edge computing and related applications. (Abstract shortened by ProQuest.)

Cloud Portability and Interoperability

The Perceptron

Cloud Service Benchmarking

A Theory of Statistical Separability in Cognitive Systems (Project Para)

To implement a Multi-level Security in Cloud Computing using Cryptography Novel Approach

Explores key challenges and solutions to assured cloud computing today and provides a provocative look at the face of cloud computing tomorrow This book offers readers a comprehensive suite of solutions for resolving many of the key challenges to achieving high levels of assurance in cloud computing. The distillation of critical research findings generated by the Assured Cloud Computing Center of Excellence (ACC-UCoE) of the University of Illinois, Urbana-Champaign, it provides unique insights into the current and future shape of robust, dependable, and secure cloud-based computing and data cyberinfrastructures. A survivable and distributed cloud-computing-based infrastructure can enable the configuration of any dynamic systems-of-systems that contain both trusted and partially trusted resources and services sourced from multiple organizations. To assure mission-critical computations and workflows that rely on such systems-of-systems it is necessary to ensure that a given configuration does not violate any security or reliability requirements. Furthermore, it is necessary to model the trustworthiness of a workflow or computation fulfillment to a high level of assurance. In presenting the substance of the work done by the ACC-UCoE, this book provides a vision for assured cloud computing illustrating how individual research contributions relate to each other and to the big picture of assured cloud computing. In addition, the book: Explores dominant themes in cloud-based systems, including design correctness, support for big data and analytics, monitoring and detection, network considerations, and performance Synthesizes heavily cited earlier work on topics such as DARE, trust mechanisms, and elastic graphs, as well as newer research findings on topics, including R-Storm, and RAMP transactions Addresses assured cloud computing concerns such as game theory, stream processing, storage, algorithms, workflow, scheduling, access control, formal analysis of safety, and streaming Bringing together the freshest thinking and applications in one of today's most important topics, Assured Cloud Computing is a must-read for researchers and professionals in the fields of computer science and engineering, especially those working within industrial, military, and governmental contexts. It is also a valuable reference for advanced students of computer science.

This book explores the concepts and techniques of cloud security using blockchain. Also discussed is the possibility of applying blockchain to provide security in various domains. The authors discuss how blockchain holds the potential to significantly increase data privacy and security while boosting accuracy and integrity in cloud data. The specific highlight of this book is focused on the application of integrated technologies in enhancing cloud security models, use cases, and its challenges. The contributors, both from academia and industry, present their technical evaluation and comparison with existing technologies. This book pertains to IT professionals, researchers, and academicians towards fourth revolution technologies.

Cloud ComputingConcepts, Technology & ArchitecturePrentice Hall

Great POSSIBILITIES and high future prospects to become ten times folds in the near FUTURE DESCRIPTION The book "Handbook of Cloud Computing" provides the latest and in-depth information of this relatively new and another platform for scientific computing which has great possibilities and high future prospects to become ten folds in near future. The book covers in comprehensive manner all aspects and terminologies associated with cloud computing like SaaS, PaaS and IaaS and also elaborates almost every cloud computing service model. The book highlights several other aspects of cloud computing like Security, Resource allocation, Simulation Platforms and futuristic trend i.e. Mobile cloud computing. The book will benefit all the readers with all in-depth technical information which is required to understand current and futuristic concepts of cloud computing. No prior knowledge of cloud computing or any of its related technology is required in reading this book. KEY FEATURES Comprehensively gives clear picture of current state-of-the-art aspect of cloud computing by elaborating terminologies, models and other related terms. Enlightens all major players in Cloud Computing industry providing services in terms of SaaS, PaaS and IaaS. Highlights Cloud Computing Simulators, Security Aspect and Resource Allocation. In-depth presentation with well-illustrated diagrams and simple to understand technical concepts of cloud. WHAT WILL YOU LEARN Cloud Computing, Virtualisation Software as a Service, Platform as a Service, Infrastructure as a Service Data in Cloud and its Security Cloud Computing – Simulation, Mobile Cloud Computing Specific Cloud Service Models Resource Allocation in Cloud Computing WHO THIS BOOK IS FOR Students of Polytechnic Diploma Classes- Computer Science/ Information Technology Graduate Students- Computer Science/ CSE / IT/ Computer Applications Master Class Students—Msc (CS/IT)/ MCA/ M.Phil, M.Tech, M.S. Researcher's—Ph.D Research Scholars doing work in Virtualization, Cloud Computing and Cloud Security Industry Professionals- Preparing for Certifications, Implementing Cloud Computing and even working on Cloud Security Table of Contents 1. Introduction to Cloud Computing 2. Virtualisation 3. Software as a Service 4. Platform as a Service 5. Infrastructure as a Service 6. Data in Cloud 7. Cloud Security 8. Cloud Computing – Simulation 9. Specific Cloud Service Models 10. Resource Allocation in Cloud Computing 11. Mobile Cloud Computing

Blockchain Security in Cloud Computing

Technology and Practices

Measuring Quality of Cloud Services from a Client Perspective

Cloud Services, Networking, and Management

Cloud Computing: A Practical Approach

An SDN-based Framework for QoSaware Mobile Cloud Computing

"The promise of cloud computing is here. These pages provide the 'eyes wide open' insights you need to transform your business." --Christopher Crowhurst, Vice President, Strategic Technology, Thomson Reuters A Down-to-Earth Guide to Cloud Computing Cloud Computing: A Practical Approach provides a comprehensive look at the emerging paradigm of Internet-based enterprise applications and services. This accessible book offers a broad introduction to cloud computing, reviews a wide variety of currently available solutions, and discusses the cost savings and organizational and operational benefits. You'll find details on essential topics, such as hardware, platforms, standards, migration, security, and storage. You'll also learn what other organizations are doing and where they're headed with cloud computing. If your company is considering the move from a traditional network infrastructure to a cutting-edge cloud solution, you need this strategic guide. Cloud Computing: A Practical Approach covers: Costs, benefits, security issues, regulatory concerns, and limitations Service providers, including Google, Microsoft, Amazon, Yahoo, IBM, EMC/VMware, Salesforce.com, and others Hardware, infrastructure, clients, platforms, applications, services, and storage Standards, including HTTP, HTML, DHTML, XMPP, SSL, and OpenID Web services, such as REST, SOAP, and JSON Platform as a Service (PaaS), Software as a Service (SaaS), and Software plus Services (S+S) Custom application development environments, frameworks, strategies, and solutions Local clouds, thin clients, and virtualization Migration, best practices, and emerging standards

Software services are established as a programming concept, but their impact on the overall architecture of enterprise IT and business operations is not well-understood. This has led to problems in deploying SOA, and some disillusionment. The SOA Source Book adds to this a collection of reference material for SOA. It is an invaluable resource for enterprise architects working with SOA.The SOA Source Book will help enterprise architects to use SOA effectively. It explains: What SOA is How to evaluate SOA features in business terms How to model SOA How to use The Open Group Architecture Framework (TOGAF™) for SOA SOA governance This book explains how TOGAF can help to make an Enterprise Architecture. Enterprise Architecture is an approach that can help management to understand this growing complexity.

Choose the right combination of public, private, and datacenter resources to empower your business Hybrid clouds are transforming the way that organizations dobusiness. This handy guide helps you find out what this new clouddeployment model is all about. You'll get down- to-earthinformation about cloud technology, questions to consider, and howto plan and deliver your move to a hybrid environment. Constructing the cloud — learn the basic concepts of thehybrid cloud from both a technical and business perspective Delivering cloud services — dive deeper into the actualfoundational elements of the hybrid cloud Identifying business value — determine your hybrid cloudneeds based on your business objectives Unified hybrid environments — find out what it means tocreate a computing environment that brings elements of the datacenter together with public and private cloud services Making it work — examine the steps you need to take tomake this new architectural approach work — includingsecurity, governance, data, integration, monitoring, and more Get your ticket to the cloud — tips on how to talk tocloud providers and plan for the service you choose Open the book and find: Different cloud deployment models and what differentiates ahybrid cloud from other cloud models The impact of the hybrid cloud on cloud delivery models Why service orientation matters in a hybrid cloud Ways to develop and deploy applications in a hybrid world Guidance in finding the right hybrid cloud service providers Security and governance in a hybrid model The role of workload optimization in hybrid environments Learn to: Recognize the benefits and challenges of a hybrid cloud Efficiently deliver and manage cloud services Understand the impact of emerging cloud standards Protect customer data with sound security practices

In mobile cloud computing (MCC), rich mobile application data is processed at the cloud infrastructure by reliving resource limited mobile devices from computationally complex tasks. However, due to the ubiquitous and mobility nature, providing time critical rich applications over remote cloud infrastructure is a challenging task for mobile application service providers. Therefore, according to the literature, close proximity placement of cloud services has been identified as a way to achieve lower end-to-end access delay and thereby provide a higher quality of experience (QoE) for rich mobile application users. However, providing a higher Quality of Service (QoS) with mobility is still a challenge within close proximity clouds. Access delay to a closely placed cloud tends to be increased over time when users move away from the cloud. However, reactive resource relocation mechanism proposed in literature does not provide a comprehensive mechanism to guarantee the QoS and as well as to minimize service provisioning cost for mobile cloud service providers. As a result, using the benefits of SDN and the data plane programmability with logically centralized controllers, a resource allocation framework was proposed for IaaS mobile clouds with regional datacenters. The user mobility problem was analyzed within SDN-enabled wireless networks and addressed the possible service level agreement violations that could occur with inter-regional mobility. The proposed framework is composed of an optimization algorithm to provide seamless cloud service during user mobility. Further a service provisioning cost minimization criteria was considered during an event of resource allocation and inter-regional user mobility.

Designing Networks and Services for the Cloud

Cloud Application Architectures

Trusted Cloud Computing

Delivering business-grade cloud applications and services

Research Advances in Cloud Computing

Security in Cloud Computing